

## 1. TRANSMITTED DATA

## 1-1 CHANNEL MESSAGES

Status (Hex)	Second (Hex)	Third (Hex)	Description	ENA
1000 nnnn (8n)	0kkk kkkk (kk)	0100 0000 (40)	Note Off kkk kkkk=0..127 ( 61Keys+Transpose )	A
1001 nnnn (9n)	0kkk kkkk (kk)	0vvv vvvv (vv)	Note On kkk kkkk=0..127 ( 61Keys+Transpose ) vvv vvvv=1..127	A
1010 nnnn (An)	0kkk kkkk (kk)	0vvv vvvv (vv)	Poly Key Pressure ( Recorded Seq Data )	T,Q
1011 nnnn (Bn)	0000 0000 (00)	0mmmm mmmmm (mm)	Bank Select(MSB) ( BANK Key, etc )	*1 P
1011 nnnn (Bn)	0000 0100 (04)	0000 0000 (00)	Foot Pedal ( Select Main Scale )	C
1011 nnnn (Bn)	0000 0100 (04)	0111 1111 (7F)	Foot Pedal ( Select Sub Scale )	C
1011 nnnn (Bn)	0000 0111 (07)	0vvv vvvv (vv)	Volume ( Assign Pedal, etc )	C
1011 nnnn (Bn)	0000 1010 (0A)	0vvv vvvv (vv)	Panpot ( by A:B Panpot )	C
1011 nnnn (Bg)	0000 1100 (0C)	0vvv vvvv (vv)	Effect Control ( Assignable Pedal )	C
1011 nnnn (Bn)	0010 0000 (20)	0111 1111 (11)	Bank Select(LSB) ( BANK Key, etc )	*1 P
1011 nnnn (Bn)	0100 0000 (40)	0000 0000 (00)	Hold 1 Off ( Damper Pedal )	C
1011 nnnn (Bn)	0100 0000 (40)	0111 1111 (7F)	Hold 1 On ( Damper Pedal )	C
1011 nnnn (Bn)	0100 1000 (4A)	0vvv vvvv (vv)	VDF CutOff ( Assignable Pedal )	C
1011 nnnn (Bg)	0101 1100 (5C)	0000 0000 (00)	Effect1 Off ( Assignable Pedal )	C
1011 nnnn (Bg)	0101 1100 (5C)	0111 1111 (7F)	Effect1 on ( Assignable Pedal )	C
1011 nnnn (Bg)	0101 1110 (5E)	0000 0000 (00)	Effect2 Off ( Assignable Pedal )	C
1011 nnnn (Bg)	0101 1110 (5E)	0xxx 1111 (7F)	Effect2 On ( Assignable Pedal )	C
1011 nnnn (Bn)	0ccc cccc (cc)	0vvv vvvv (vv)	Control Data ( Recorded Seq Data ) ccc cccc=00..127	C,Q
1100 nnnn (Cn)	0ppp pppp (pp)	---- ----	Program Change ( Prog Change)	*1 P
1101 nnnn (Dn)	0vvv vvvv (vv)	---- ----	Channel Pressure ( Aftertouch )	T
1110 nnnn (En)	0bbb bbbb (bb)	0bbb bbbb (bb)	Pitch Bend ( Joystick(X) )	C

nnnn : MIDI Channel No.(0..15) Usually Global Channel. When using sequencer, each track's channel.

gggg : Always Global Channel No.(0..15)

vvvv : Value

ENA = A : Always Enabled

C : Enabled when Control Filter in GLOBAL Mode is ENA

P : Enabled when Program Filter in GLOBAL Mode is ENA

T : Enabled when Aftertouch Filter in GLOBAL Mode is ENA

Q : Enabled when sequencer is playing (transmitting) or recording (receiving)

T,Q: T and Q

C,Q: C and Q

\*1 : Program : MIDI Out (Hex)

BANK 0(GM): mm,ll,pp = 38,00,00..7F

BANK 1 : mm,ll,pp = 00,01,00..7F

BANK 2 : mm,ll,pp = 00,02,00..7F

BANK 3 : mm,ll,pp = 00,03,00..7F

BANK 4 : mm,ll,pp = 00,04,00..07

## 1-2 SYSTEM COMMON MESSAGES

Status (Hex)	Second (Hex)	Third (Hex)	Description	
1111 0010 (F2)	0sss ssss (ss)	0ttt tttt (tt)	Song Position Pointer sss ssss : Least significant (LSB) ttt tttt : Most significant (MSB)	*2 *2

Transmitted when in BSEQ mode (Internal Clock)

\*2 : For Example Time Signature = 4/4, 8/8

tt,ss = 00,10 / Measure

## 1-3 SYSTEM REALTIME MESSAGES

Status (Hex)	Description	
1111 1000 (F8)	Timing Clock	*3
1111 1010 (FA)	Start	*3
1111 1011 (FB)	Continue	*3
1111 1100 (FC)	Stop	*3
1111 1110 (FE)	Active Sensing	

\*3 : Transmits when in Backing Sequence mode (Internal Clock)

## 1-4 UNIVERSAL SYSTEM EXCLUSIVE MESSAGES (DEVICE INQUIRY REPLY)

Byte (Hex)	Description
1111 0000 (F0)	Exclusive Status
0111 1110 (7E)	Non Realtime Message
0000 gggg (0g)	MIDI GLOBAL CHANNEL ( DEVICE ID )
0000 0110 (06)	INQUIRY MESSAGE
0000 0010 (02)	IDENTITY REPLY
0100 0010 (42)	KORG ID ( MANUFACTURERS ID )
0011 1001 (39)	i-series ID ( FAMILY CODE (LSB))
0000 0000 (00)	( FAMILY CODE (MSB))
0000 0110 (06)	Ci-800 ( MEMBER CODE (LSB))
0000 0000 (00)	( MEMBER CODE (MSB))
0*** **** (**)	ROM No. 1.. ( Minor Ver. (LSB))
0000 0000 (00)	( Minor Ver. (MSB))
0*** **** (**)	SOFT VER. 1.. ( Major Ver. (LSB))
0000 0000 (00)	( Major Ver. (MSB))
1111 0111 (F7)	END OF EXCLUSIVE

Transmits when INQUIRY MESSAGE REQUEST Received

## 1-5 STRUCTURE OF KORG SYSTEM EXCLUSIVE MESSAGES

1st Byte = 1111 0000 (F0) : Exclusive Status	EX.Header
2nd Byte = 0100 0010 (42) : KORG ID	
3rd Byte = 0011 gggg (3g) : Format ID g:Global ch.	
4th Byte = 0100 0011 (43) : Ci-800 ID	
5th Byte = 0fff ffff (ff) : Function Code (See Func Code List)	
6th Byte = 0ddd dddd (dd) : Data	
: :	
LastByte = 1111 0111 (F7) : End of Exclusive .... EOX	

## 1-6 Transmitted Function Code List

Func	Description	R	D	E	C
42	MODE DATA	o			
4E	MODE CHANGE				o*4
53	DRUM KIT PARAMETER CHANGE				o*5
4C	ALL PROGRAM PARAMETER DUMP	o			
64	ALL ARRANGEMENT PARAMETER DUMP	o	o		
65	ALL STYLE DATA DUMP	o			
66	ALL BACKING SEQUENCE DATA DUMP	o	o		
51	GLOBAL DATA DUMP	o	o		
52	DRUMS DATA DUMP	o	o		
50	ALL DATA(GLB,DRM,PRG,ARR,STY,SEQ,BSQ)DUMP	o	o		
26	RECEIVED MESSAGE FORMAT ERROR	o		o	
23	DATA LOAD COMPLETED (ACK)			o	
24	DATA LOAD ERROR (NAK)			o	
67	CHORD				

Transmitted when

- R : Request message is received  
D : Data dump from Global mode( Doesn't respond to Exclusive ENA,DIS)  
E : Exclusive message is received  
C : Mode or No. is changed by switch

Some Request Messages are not received in some modes. See 2-6.

\* When transmitting a series of exclusive messages to the Ci-800, wait until [DATA LOAD COMPLETED] or [WRITE COMPLETED] is received.

\*4 : Transmitted when Mode is changed.

\*5 : Transmitted when editing drum kit's parameters in GLOBAL mode.

## 2.RECOGNIZED RECEIBE DATA

## 2-1 CHANNEL MESSAGES

Status (Hex)	Second (Hex)	Third (Hex)	Description	ENA
1000 nnnn (8n)	0kkk kkkk (kk)	0xxx xxxx (xx)	Note Off	A
1001 nnnn (9n)	0kkk kkkk (kk)	0000 0000 (00)	Note Off	A
1001 nnnn (9n)	0kkk kkkk (kk)	0vvv vvvv (vv)	Note On	A
			vvv vvvv=1..127	
1010 nnnn (An)	0kkk kkkk (kk)	0vvv vvvv (vv)	Poly Key Pressure ( For Seq.Recording )	T,Q

1011	nnnn	(Bn)	0000	0000	(00)	0mmm mmmm (mm)	Bank Select(MSB)	*1	P
1011	nnnn	(Bn)	0000	0001	(01)	0vvv vvvv (vv)	Modulation1 Depth ( Pitch Modulation )		C
1011	nnnn	(Bn)	0000	0010	(02)	0vvv vvvv (vv)	Modulation2 Depth ( Cutoff Modulation )		C
1011	nnnn	(Bn)	0000	0100	(04)	00vv vvvv(<40)	Foot Pedal Off ( Select Main Scale )		C
1011	nnnn	(Bn)	0000	0100	(04)	01vv vvvv(>3F)	Foot Pedal On ( Select Sub Scale )		C
1011	nnnn	(Bn)	0000	0110	(06)	0vvv vvvv (vv)	Data Entry (MSB) ( For RPN Edit )		C
1011	nnnn	(Bn)	0000	0111	(07)	0vvv vvvv (vv)	Volume		C
1011	nnnn	(Bn)	0000	1010	(0A)	0vvv vvvv (vv)	Panpot ( A:B Panpot )		C
1011	nnnn	(Bn)	0000	1011	(0B)	0vvv vvvv (vv)	Expression		C
1011	gggg	(Bg)	0000	1100	(0C)	0vvv vvvv (vv)	Effect Control ( Dyna Mod Src= PEDAL1 )		C
1011	gggg	(Bg)	0000	1101	(0D)	0vvv vvvv (vv)	Effect Control ( Dyna Mod Src= PEDAL2 )		C
1011	nnnn	(Bn)	0010	0000	(20)	0111 1111 (11)	Bank Select(LSB)	*1	P
1011	nnnn	(Bn)	0010	0110	(26)	0vvv vvvv (vv)	Data Entry (LSB) ( For RPN Edit )		C
1011	nnnn	(Bn)	0100	0000	(40)	00xx xxxx(<40)	Hold1 Off ( Damper Off )		C
1011	nnnn	(Bn)	0100	0000	(40)	01xx xxxx(>3F)	Hold1 On ( Damper On )		C
1011	nnnn	(Bn)	0100	1000	(48)	0vvv vvvv (vv)	Release Time ( Perf Edit Rel Time )	*4	C
1011	nnnn	(Bn)	0100	1000	(49)	0vvv vvvv (vv)	Attack Time ( Perf Edit Atk Time )	*4	C
1011	nnnn	(Bn)	0100	1000	(4A)	0vvv vvvv (vv)	Brightness ( Perf Edit Cutoff )	*4	C
1011	nnnn	(Bn)	0101	1011	(5B)	0vvv vvvv (vv)	Reverb Level ( Send C Level )		C
1011	gggg	(Bg)	0101	1100	(5C)	0000 0000 (00)	Effect1 Level ( FX1 Off )		C
1011	gggg	(Bg)	0101	1100	(5C)	0xxx xxxx(>00)	Effect1 Level ( FX1 On )		C
1011	nnnn	(Bn)	0101	1101	(5D)	0vvv vvvv (vv)	Chorus Level ( Send D Level )		C
1011	gggg	(Bg)	0101	1110	(5E)	0000 0000 (00)	Effect2 Level ( FX2 Off )		C
1011	gggg	(Bg)	0101	1110	(5E)	0xxx xxxx(>00)	Effect2 Level ( FX2 On )		C
1011	nnnn	(Bn)	0110	0000	(60)	0000 0000 (00)	DATA Increment ( For RPN Edit )		C
1011	nnnn	(Bn)	0110	0001	(61)	0000 0000 (00)	DATA Decrement ( For RPN Edit )		C
1011	nnnn	(Bn)	0110	0100	(64)	0000 00rr (0r)	RPN Parameter No.(LSB)	*3	A
1011	nnnn	(Bn)	0110	0101	(65)	0000 0000 (00)	RPN Parameter No.(MSB)	*3	A
1011	nnnn	(Bn)	0111	1000	(78)	0000 0000 (00)	All Sound Off		C
1011	nnnn	(Bn)	0111	1001	(79)	0000 0000 (00)	Reset All Controllers		C
1011	nnnn	(Bn)	0ccc cccc (cc)			0vvv vvvv (vv)	Control Data ( For Seq.Recording )		C,Q
						ccc cccc=00..127			
1011	gggg	(Bg)	0111	1010	(7A)	0000 0000 (00)	Local Control Off		A
1011	gggg	(Bg)	0111	1010	(7A)	0111 1111 (7F)	Local Control On		A
1011	nnnn	(Bn)	0111	1011	(7B)	0000 0000 (00)	All Notes Off		A
1011	nnnn	(Bn)	0111	110x (7x)		0000 0000 (00)	Omni Mode Off/On ( All Notes Off )		A
1011	nnnn	(Bn)	0111	1110	(7E)	000m mmmm(<11)	Mono Mode On ( All Notes Off )		A
						m mmmm=0..16			
1011	nnnn	(Bn)	0111	1111	(7F)	0000 0000 (00)	Poly mode On ( All Notes Off )		A
1100	nnnn	(Cn)	0ppp pppp (pp)			---- ----	Program Change ( Prog,Comb CHG )	*1,2	P
1101	nnnn	(Dn)	0vvv vvvv (vv)			---- ----	Channel Pressure ( Aftertouch )		T
1110	nnnn	(En)	0bbb bbbb (bb)			0bbb bbbb (bb)	Bender Change ( Pitch Bend )		C

nnnn : MIDI Channel No.(0..15)... Usually Global Channel.

When in SONG Mode, each track's channel.

gggg : Always Global Channel No.(0..15)

x : Random

ENA : Same as TRANSMITTED DATA

\*1 : MIDI In (Hex): Program  
 mm,ll,pp = 00,00,00..7F : BANK 0(GM)  
 38,00,00..7F : BANK 0(GM)  
 00,01,00..7F : BANK 1  
 00,02,00..7F : BANK 2  
 00,03,00..7F : BANK 3  
 00,04,00..7F : BANK 4

\*2 : After processing (while Exclusive = ENA) transmits exclusive message [DATA LOAD COMPLETED]  
 or [DATA LOAD ERROR].

\*3 : rr = 0 : Pitch Bend Sensitivity  
 = 1 : Fine Tune ( When Received Ch = Global Ch, Master Tune )  
 = 2 : Coarse Tune ( Transpose )

\*4 : vv < 40: Fast or Dark  
 = 40: No change  
 > 40: Slow or Bright

## 2-2 SYSTEM COMMON MESSAGES

Status (Hex)	Second (Hex)	Third (Hex)	Description
1111 0010 (F2)	0sss ssss (ss)	0ttt tttt (tt)	Song Position Pointer
1111 0011 (F3)	000s ssss (ss)	---- ----	Song Select

Received when in BSEQ mode (External Clock)

## 2-3 SYSTEM REALTIME MESSAGES

Status (Hex)	Description
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1111 1000 (F8)	Timing Clock	*5
1111 1010 (FA)	Start	*5
1111 1011 (FB)	Continue	*5
1111 1100 (FC)	Stop	*5
1111 1110 (FE)	Active Sensing	

\*5 : Received when in BSEQ mode (External Clock)

## 2-4 UNIVERSAL SYSTEM EXCLUSIVE MESSAGE ( NON REALTIME )

Byte (Hex)	Description	
1111 0000 (F0)	EXCLUSIVE STATUS	
0111 1110 (7E)	NON REALTIME MESSAGE	
0ggg gggg (gg)	MIDI CHANNEL	*6
0000 aaaa (0a)	SUB ID 1	*7
0000 00bb (0b)	SUB ID 2	*7
1111 0111 (F7)	END OF EXCLUSIVE	

\*6 : gg = 0..F : Received if Global Channel  
= 7F : Received on any Channel

\*7 : a,b = 06,01 : INQUIRY MESSAGE REQUEST  
= 09,01 : GENERAL MIDI MODE ON  
( Received anytime except when Seq playing/recording, or when DATA FILER page is selected)

## 2-5 UNIVERSAL SYSTEM EXCLUSIVE MESSAGE ( REALTIME )

Byte (Hex)	Description	
1111 0000 (F0)	EXCLUSIVE STATUS	
0111 1111 (7F)	REALTIME MESSAGE	
0ggg gggg (gg)	MIDI CHANNEL	*6
0000 0100 (04)	SUB ID 1	
0000 00bb (0b)	SUB ID 2	*8
0vvv vvvv (vv)	VALUE(LSB)	*8
0mmm mmmm (mm)	VALUE(MSB)	*8
1111 0111 (F7)	END OF EXCLUSIVE	

\*8 : b = 01 : MASTER VOLUME ( mm,vv = 00,00..7F,7F : Min..Max )  
= 02 : MASTER BALANCE ( mm,vv = 00,00..40,00..7F,7F : L..Center..R )

## 2-6 SYSTEM EXCLUSIVE MESSAGES

\* Not received when Sequencer is playing, recording, or when the DATA FILER page is selected.

### Function Code List

Func	Description	G	A	No.
12	MODE REQUEST	o	o	42
1C	ALL PROGRAM PARAMETER DUMP REQUEST	oo	o	4C
30	ALL ARRANGEMENT PARAMETER DUMP REQUEST	oo	o	64
31	ALL STYLE DATA DUMP REQUEST	oo	o	65
32	ALL BACKING SEQUENCE DATA DUMP REQUEST	oo	o	66
0E	GLOBAL DATA DUMP REQUEST	oo	o	51
0D	DRUMS DATA DUMP REQUEST	oo	o	52
0F	ALL DATA(GLB,DRM,PRG,ARR,STY,SEQ,BSQ)DUMP REQ	oo	o	50
4C	ALL PROGRAM PARAMETER DUMP	oo	o	23
64	ALL ARRANGEMENT PARAMETER DUMP	oo	o	23
65	ALL STYLE DATA DUMP	oo	o	23
66	ALL BACKING SEQUENCE DATA DUMP	oo	o	23
51	GLOBAL DATA DUMP	oo	o	23
52	DRUMS DATA DUMP	oo	o	23
50	ALL DATA(GLB,DRM,PRG,ARR,STY,SEQ,BSQ) DUMP	oo	o	23
4E	MODE CHANGE	o	o	23
41	PARAMETER CHANGE			23
53	DRUM KIT PARAMETER CHANGE	o		23
67	CHORD	o	o	

Received when in

G : GLOBAL Mode

(oo: Does not respond to Exclusive ENA, DIS on DATA DUMP page)

A : any other mode

No.: MIDI Out Function No.

(transmitted after the message has been received.)

## 3.MIDI EXCLUSIVE FORMAT(R:Receive, T:Transmit)

(note){43/39}:transmit {Ci mode /CMP mode}setting on Data Dump page.

Both code can be recieved.

43{39}:Both code can be recieved,but transmit 43 only.  
See 1-5 'STRUCTURE OF KORG SYSTEM EXCLUSIVE MESSAGES'

## (1) MODE REQUEST R

Byte	Description	
F0,42,3g,{43/39}	EXCLUSIVE HEADER	
0001 0010 (12)	MODE REQUEST	12H
1111 0111 (F7)	EOX	

Receives this message, and transmits Func=42 message.

## (2) ALL PROGRAM PARAMETER DUMP REQUEST R

Byte	Description	
F0,42,3g,{43/39}	EXCLUSIVE HEADER	
0001 1100 (1C)	ALL PROGRAM PARAMETER DUMP REQUEST	1CH
1111 0111 (F7)	EOX	

Receives this message, and transmits Func=4C or Func=24 message.

## (3) ALL ARRANGEMENT PARAMETER DUMP REQUEST R

Byte	Description	
F0,42,3g,{43/39}	EXCLUSIVE HEADER	
0011 0000 (30)	ALL ARRANGEMENT PARAMETER DUMP REQUEST	30H
1111 0111 (F7)	EOX	

Receives this message, and transmits Func=64 or Func=24 message.

## (4) ALL STYLE DATA DUMP REQUEST R

Byte	Description	
F0,42,3g,{43/39}	EXCLUSIVE HEADER	
0011 0001 (31)	ALL STYLE DATA DUMP REQUEST	31H
1111 0111 (F7)	EOX	

Receives this message, and transmits Func=65 or Func=24 message.

## (5) ALL BACKING SEQUENCE DATA DUMP REQUEST R

Byte	Description	
F0,42,3g,{43/39}	EXCLUSIVE HEADER	
0011 0010 (32)	ALL BACKING SEQUENCE DATA DUMP REQUEST	32H
1111 0111 (F7)	EOX	

Receives this message, and transmits Func=66 or Func=24 message.

## (6) GLOBAL DATA DUMP REQUEST R

Byte	Description	
F0,42,3g,{43/39}	EXCLUSIVE HEADER	
0000 1110 (0E)	GLOBAL DATA DUMP REQUEST	0EH
1111 0111 (F7)	EOX	

Receives this message, and transmits Func=51 or Func=24 message.

## (7) DRUMS DATA DUMP REQUEST R

Byte	Description	
F0,42,3g,{43/39}	EXCLUSIVE HEADER	
0000 1101 (0D)	DRUMS DATA DUMP REQUEST	0DH
1111 0111 (F7)	EOX	

Receives this message, and transmits Func=52 or Func=24 message.

## (8) ALL DATA(GLB,DRM,PRG,ARR,STY,SEQ,BSQ) DUMP REQUEST R

Byte	Description	
F0,42,3g,{43/39}	EXCLUSIVE HEADER	
0000 1111 (0F)	ALL DATA DUMP REQUEST	0FH
1111 0111 (F7)	EOX	

Receives this message, and transmits Func=50 or Func=24 message.

## (9) ALL PROGRAM PARAMETER DUMP

R,T

Byte	Description
F0,42,3g,{43/39}	EXCLUSIVE HEADER
0100 1100 (4C)	ALL PROGRAM PARAMETER DUMP 4CH
0ddd dddd (dd)	Data (NOTE 1,3)
:	:
1111 0111 (F7)	EOX

Receives this message & data, and transmits Func=23 or Func=24 message.

Receives Func=1C message, and transmits this message & data.

## (10) ALL ARRANGEMENT PARAMETER DUMP

R,T

Byte	Description
F0,42,3g,{43/39}	EXCLUSIVE HEADER
0110 0100 (64)	ALL ARRANGEMENT PARAMETER DUMP 64H
0ddd dddd (dd)	Data (NOTE1,4)
:	:
1111 0111 (F7)	EOX

Receives this message & data, and transmits Func=23 or Func=24 message.

Receives Func=30 message, and transmits this message & data.

Transmits this message & data when DATA DUMP is executed

## (11) ALL STYLE DATA DUMP

R,T

Byte	Description
F0,42,3g,{43/39}	EXCLUSIVE HEADER
0110 0101 (65)	ALL STYLE DATA DUMP 65H
0ddd dddd (dd)	Style Header (NOTE 1,5-1)
:	:
0ddd dddd (dd)	Style Data (NOTE 1,5-2)
:	:
1111 0111 (F7)	EOX

Receives this message & data, and transmits Func=23 or Func=24 message.

Receives Func=31 message, and transmits this message & data.

## (12) ALL BACKING SEQUENCE DATA DUMP

R,T

Byte	Description
F0,42,3g,{43/39}	EXCLUSIVE HEADER
0110 0110 (66)	ALL BACKING SEQUENCE DATA DUMP 66H
0sss ssss (ss)	Backing Sequence Data Size (NOTE 7-1)
:	:
0ddd dddd (dd)	Control Data (NOTE 1,7-2)
:	:
0ddd dddd (dd)	Backing Sequence Data (NOTE 1,7-3)
:	:
1111 0111 (F7)	EOX

Receives this message & data, and transmits Func=23 or Func=24 message.

Receives Func=32 message, and transmits this message & data.

Transmits this message & data when DATA DUMP is executed.

## (13) GLOBAL DATA DUMP

R,T

Byte	Description
F0,42,3g,{43/39}	EXCLUSIVE HEADER
0101 0001 (51)	GLOBAL DATA DUMP 51H
0ddd dddd (dd)	Data (NOTE 1,8)
:	:
1111 0111 (F7)	EOX

Receives this message & data, and transmits Func=23 or Func=24 message.

Receives Func=0E message, and transmits this message & data.

Transmits this message & data when DATA DUMP is executed.

## (14) DRUMS DATA DUMP

R,T

Byte	Description
F0,42,3g,{43/39}	EXCLUSIVE HEADER

0101 0010 (52)	DRUMS DATA DUMP	52H
0ddd dddd (dd)	Data	(NOTE 1,9)
:	:	
1111 0111 (F7)	EOX	

Receives this message & data, and transmits Func=23 or Func=24 message.  
 Receives Func=0D message, and transmits this message & data.  
 Transmits this message & data when DATA DUMP is executed.

(15) ALL DATA(GLB,DRM,PRG,ARR,STY,SEQ,BSQ) DUMP R,T

Byte	Description	
F0,42,3g,{43/39}	EXCLUSIVE HEADER	
0101 0000 (50)	ALL DATA DUMP	50H
0sss ssss (ss)	Sequence Data Size	(NOTE 6-1)
:	:	
0sss ssss (ss)	Backing Sequence Data Size	(NOTE 7-1)
:	:	
0ddd dddd (dd)	Data	(NOTE 1,10)
:	:	
1111 0111 (F7)	EOX	

Receives this message & data, and transmits Func=23 or Func=24 message.  
 Receives Func=0F message, and transmits this message & data.  
 Transmits this message & data when DATA DUMP is executed.

(16) MODE CHANGE R,T

Byte	Description	
F0,42,3g,39	EXCLUSIVE HEADER	
0100 1110 (4E)	MODE CHANGE	4EH
0000 mmmm (0m)	Mode Data	(NOTE 11)
1111 0111 (F7)	EOX	

Receives this message & data, changes the Mode, and transmits Func=23 or Func=24.  
 When the mode is changed by switch, this message & data is transmitted.

(17) PARAMETER CHANGE R

Byte	Description	
F0,42,3g,43{39}	EXCLUSIVE HEADER	
0100 0001 (41)	PARAMETER CHANGE	41H
0ppp pppp (pp)	Parameter No.	(TABLE 8)
0vvv vvvv (vv)	Value (LSB bit6..0)	(NOTE 12)
0vvv vvvv (vv)	Value (MSB bit13..7)	(NOTE 12)
1111 0111 (F7)	EOX	

Receives this message & data, and transmits Func=23 or Func=24 message.  
 When the Parameter No. is changed by switch, this message & data is transmitted.

(18) DRUM KIT PARAMETER CHANGE R,T

Byte	Description	
F0,42,3g,43{39}	EXCLUSIVE HEADER	
0101 0011 (53)	DRUM KIT PARAMETER CHANGE	53H
0000 000k (0k)	Drum Kit No.	(NOTE 13)
00ss ssss (ss)	Index No.( ss=00..59 )	
0000 pppp (0p)	Parameter No.	(TABLE 9)
0vvv vvvv (vv)	Value (LSB bit6..0)	(NOTE 12)
0vvv vvvv (vv)	Value (MSB bit13..7)	(NOTE 12)
1111 0111 (F7)	EOX	

Receives this message & data, and transmits Func=23 or Func=24 message.

(19) MODE DATA T

Byte	Description	
F0,42,3g,39	EXCLUSIVE HEADER	
0100 0010 (42)	MODE DATA	42H
0000 mmmm (0m)	Mode Data	(NOTE 11)
0000 0000 (00)		
1111 0111 (F7)	EOX	

Receives Func=12 message, and transmits this message & data.

(20) MIDI IN DATA FORMAT ERROR T

Byte	Description	
F0,42,3g,43	EXCLUSIVE HEADER	
0010 0110 (26)	MIDI IN DATA FORMAT ERROR	26H
1111 0111 (F7)	EOX	

Transmits this message when there is an error in the MIDI IN message (for example, if data length is other than expected).

(21) DATA LOAD COMPLETED ( ACK ) T

Byte	Description	
F0,42,3g,43	EXCLUSIVE HEADER	
0010 0011 (23)	DATA LOAD COMPLETED	23H
1111 0111 (F7)	EOX	

Transmits this message when DATA LOADING and PROCESSING have been completed.

(22) DATA LOAD ERROR ( NAK ) T

Byte	Description	
F0,42,3g,43	EXCLUSIVE HEADER	
0010 0100 (24)	DATA LOAD ERROR	24H
1111 0111 (F7)	EOX	

Transmits this message when DATA LOADING and PROCESSING have not been completed (for example, if memory is protected).

(23) CHORD T

Byte	Description	
F0,42,3g,39	EXCLUSIVE HEADER	
0110 0111 (67)	CHORD	67H
0000 rrrr (0r)	Root (C=0)	
0000 bbbb (0b)	Bass (C=0)	
0ccc cccc (cc)	Chord type (LSB)	(NOTE 14)
000c cccc (cc)	Chord type (MSB)	(NOTE 14)
0ttt tttt (tt)	Tension note(s) (LSB)	(NOTE 15)
000t tttt (tt)	Tension note(s) (MSB)	(NOTE 15)
1111 0111 (F7)	EOX	

NOTE 1 : DATA CONVERT METHOD (INTERNAL DATA <--> MIDI DATA)  
 (for NOTE 2, 3, 4, 5-1, 5-2, 6-2, 6-3, 7-2, 7-3, 8, 9, 10)  
 Internal 7byte data <--convert--> MIDI 8 byte data  
 example) Internal data(bit image) MIDI data(bit image)

Aaaaaaaa	0GFEDCBA
Bbbbbbbb	0aaaaaaa
Cccccccc	0bbbbbbb
Dddddddd	0ccccccc
Eeeeeeee	0ddddddd
Ffffffff	0eeeeeee
Gggggggg	0fffffff
Hhhhhhhh	0ggggggg
Iiiiiiii	0HIJKLMN
:	0hhhhhhh
:	:
Vvvvvvvv	0VW00000
Wwwwwwww	0vvvvvvv
	0wwwwwww
	11110111 (EOX=7FH)

NOTE 2 : PROGRAM PARAMETER DUMP FORMAT ( See TABLE 1, NOTE 1 )  
 [Parameter No.00],..., [Parameter No.163]

NOTE 3 : ALL PROGRAM PARAMETER DUMP FORMAT ( See TABLE 1, NOTE 2 )  
 [Prog.D11(164Byte)],..., [Prog.D88(164Byte)],  
 [Prog.Dr7(164Byte)], [Prog.Dr8(164Byte)]

NOTE 4 : ALL ARRANGEMENT PARAMETER DUMP FORMAT ( See TABLE 5, NOTE 1 )  
 [ARR11(131Byte)],..., [ARR88(131Byte)]

NOTE 5 : ALL STYLE DATA DUMP FORMAT

5-1: Style Header

( See TABLE 6-3, NOTE 1 )

5-2: Style Data

( See TABLE 6-1, TABLE 6-2, NOTE 1 )



## NOTE 6 : SEQUENCE DATA DUMP FORMAT

- 6-1: Sequence Data Size (2Byte) 4Step(16Byte)/1Size ( See 6-3 )  
 [Data Size (bit6..0)],  
 [Data Size (bit13..7)]
- 6-2: Control Data Dump Format (3702Byte) ( See TABLE 4-1, NOTE 1 )  
 [Control Data (BSEQ Size(296) x 10 = 2960Byte)],  
 [Pattern Data (200Byte)],  
 [Song0-Tr.1 Addr (2Byte)],...,[Song0-Tr.16 Addr],[Song0-Tempo Track Addr],  
 [Song1-Tr.1 Addr ],...,[Song9-Tr.16 Addr],[Song9-Tempo Track Addr] (340Byte),  
 [Pattern0 Addr (2Byte)],...,[Pattern99 Addr] (200Byte),  
 [Pattern End Addr(2Byte)]
- 6-3: Sequence Data Dump Format ( See TABLE 4-2, NOTE 1 )  
 [Sequence 1st Data(4Byte)],...,[Seq.nth Data]

## NOTE 7 : ALL BACKING SEQUENCE DATA DUMP FORMAT

- 7-1: Backing Sequence Data Size (2Byte) 4Step(16Byte)/1Size ( See 7-3 )  
 [Data Size (bit6..0)],  
 [Data Size (bit13..7)]
- 7-2: Control Data Dump Format (2292Byte) ( See TABLE 7-1, NOTE 1 )  
 [Control Data (BSQ Size(195) x 10 = 1950Byte)],  
 [BSQ0-Tr.1 Addr (2Byte)],...,[BSQ0-Tr.16 Addr],[BSQ0-Tempo Track Addr],  
 [BSQ1-Tr.1 Addr ],...,[BSQ9-Tr.16 Addr],[BSQ9-Tempo Track Addr] (340Byte),  
 [End Addr (2Byte)]
- 7-3: Backing Sequence Data Dump Format ( See TABLE 7-2, NOTE 1 )  
 [B.Sequence 1st Data(4Byte)],...,[BSQ nth Data]  
 n : BSQ Data Step = 0 .. 40000

## NOTE 8 : GLOBAL DATA DUMP FORMAT ( See TABLE 2, NOTE 1 )

[Global Data (28Byte)]

## NOTE 9 : DRUMS DATA DUMP FORMAT ( See TABLE 3, NOTE 1 )

[Drum Kit Data (7x60x2Byte)]

## NOTE 10 : ALL DATA (GLB,DRM,PRG,ARR,STY,SEQ,BSQ) DUMP FORMAT ( See NOTE 1 )

[Global Data], ( See NOTE 8 )  
 [Drums Data], ( See NOTE 9 )  
 [All Program Parameters], ( See NOTE 3 )  
 [All Arrangement Parameters], ( See NOTE 4 )  
 [All Style Data], ( See NOTE 5 )  
 [All Sequence Data(dummy)] ( See NOTE 6-2, 6-3 )  
 [All Backing Sequence Data] ( See NOTE 7-2, 7-3 )

NOTE 11 : mmmm = 4 : GLOBAL 6 : SONG  
10 : ARRANGEMENT 11 : BACKING SEQUENCE

## NOTE 12 : VALUE DATA FORMAT (Use with PARAMETER CHANGE,DRUM KIT PARAMETER CHANGE)

Bit15-13 of Value Data is the Sign Flag, and each bit has the same value  
 Value Data SSSHHHHH LLLLLLLL (S=Sign H,L=13bit data)  
 MIDI Data OSHHHHHL OLLLLLLL

NOTE 13 : kk = 00: DrumKit1  
01: DrumKit2

## NOTE 14 : CHORD TYPE

Type	MSB	LSB
No Chord	0000 0000	0000 0000
dim	0000 0000	0100 1001
sus2	0000 0001	0000 0101
m	0000 0001	0000 1001
major	0000 0001	0001 0001
sus4	0000 0001	0010 0001
aug	0000 0010	0001 0001
m6	0000 0101	0000 1001
6	0000 0101	0001 0001
m7!5	0000 1000	0100 1001
7!5	0000 1000	0101 0001
m7	0000 1001	0000 1001
7	0000 1001	0001 0001
7sus4	0000 1001	0010 0001
aug7	0000 1010	0001 0001
dimM7	0001 0000	0100 1001

M715	0001 0000	0101 0001
mM7	0001 0001	0000 1001
M7	0001 0001	0001 0001
M7sus4	0001 0001	0010 0001
augM7	0001 0010	0001 0001

## NOTE 15 : TENSION NOTE(S)

Tension	MSB	LSB
Flatted 9th	0000 0000	0000 0010
9th	0000 0000	0000 0100
Sharped 9th	0000 0000	0000 1000
11th	0000 0000	0010 0000
Sharped 11th	0000 0000	0100 0000
Flatted 13th	0000 0010	0000 0000
13th	0000 0100	0000 0000

## PROGRAM PARAMETERS (TABLE 1)

No.	PARAMETER	DATA(Hex) : VALUE	VDF-1
00	PROGRAM NAME (Head)	20..7F : ' '..<-'	50   CUTOFF VALUE   00..63 : 00..99
:	:	:	51   KBD TRACK KEY   00..7F : C-1..G9
09	PROGRAM NAME (Tail)		52   CUTOFF KBD TRACK   9D..63 : -99..99
	OSCILLATOR		53   EG INTENSITY   00..63 : 00..99
10	OSCILLATOR MODE	0,1,2 *1	54   EG TIME KBD TRACK   00..63 : 00..99
11	ASSIGN	bit0=0:POL, =1:MON	55   EG TIME VEL.SENSE   00..63 : 00..99
	HOLD	bit1=0:OFF, =1:ON	56   EG INT.VEL.SENSE   9D..63 : -99..99
12	OSC-1 M/D.SOUND(LSB)	0..???? : 0..????	VDF-1 EG
13	OSC-1 M/D.SOUND(MSB)	*14	57   ATTACK TIME   00..63 : 00..99
14	OSC-1 OCTAVE	FE..01 : 32'..4'	58   ATTACK LEVEL   9D..63 : -99..99
15	OSC-2 M/D.SOUND(LSB)	0..???? : 0..????	59   DECAY TIME   00..63 : 00..99
16	OSC-2 M/D.SOUND(MSB)	*14	60   BREAK POINT   9D..63 : -99..99
17	OSC-2 OCTAVE	FE..01 : 32'..4'	61   SLOPE TIME   00..63 : 00..99
18	INTERVAL	F4..0C : -12..12	62   SUSTAIN LEVEL   9D..63 : -99..99
19	DETUNE	CE..32 : -50..50	63   RELEASE TIME   00..63 : 00..99
20	DELAY START	00..63 : 00..99	64   RELEASE LEVEL   9D..63 : -99..99
	PITCH EG		VDA-1
21	START LEVEL	9D..63 : -99..99	65   OSCILLATOR LEVEL   00..63 : 00..99
22	ATTACK TIME	00..63 : 00..99	66   KBD TRACK KEY   00..7F : C-1..G9
23	ATTACK LEVEL	9D..63 : -99..99	67   AMP. KBD TRACK INT.   9D..63 : -99..99
24	DECAY TIME	00..63 : 00..99	68   AMP. VELOCITY SENSE   9D..63 : -99..99
25	RELEASE TIME	00..63 : 00..99	69   EG TIME KBD TRACK   00..63 : 00..99
26	RELEASE LEVEL	9D..63 : -99..99	70   EG TIME VEL.SENSE   00..63 : 00..99
27	TIME VELOCITY SENSE	9D..63 : -99..99	VDA-1 EG
28	LEVEL VELOCITY SENSE	9D..63 : -99..99	71   ATTACK TIME   00..63 : 00..99
	CUTOFF MG		72   ATTACK LEVEL   00..63 : 00..99
	WAVEFORM	bit0..2 : 0..5 *2	73   DECAY TIME   00..63 : 00..99
29	OSC-1 MG ENABLE	bit5=0:OFF, =1:ON	74   BREAK POINT   00..63 : 00..99
	OSC-2 MG ENABLE	bit6=0:OFF, =1:ON	75   SLOPE TIME   00..63 : 00..99

	KEY SYNC	bit7=0:OFF, =1:ON	76	SUSTAIN LEVEL	00..63 : 00..99	
30	FREQUENCY	00..63 : 00..99	77	RELEASE TIME	00..63 : 00..99	
31	DELAY	00..63 : 00..99		OSC-1 EG TIME KBD TRACK, VEL. SW & POLARITY		
32	INTENSITY	00..63 : 00..99	78	F.EG TIME K.T SW&POL	bit0..7	*3
	AFTERTOUCH		79	F.EG TIME VEL.SW&POL	bit0..7	*3
33	PITCH BEND RANGE	F4..0C : -12..12	80	A.EG TIME K.T SW&POL	bit0..7	*3
34	VDF CUTOFF	9D..63 : -99..99	81	A.EG TIME VEL.SW&POL	bit0..7	*3
35	VDF MG INT	00..63 : 00..99		OSC-1 SEND		
36	VDA AMPLITUDE	9D..63 : -99..99	82	D SEND LEVEL	bit0..3 : 0..9	
	JOYSTICK			C SEND LEVEL	bit4..7 : 0..9	
37	PITCH BEND RANGE	F4..0C : -12..12		COLOR-1		
38	VDF SWEEP INT.	9D..63 : -99..99	83	INTENSITY	00..63 : 00..99	
39	VDF MG INT.	00..63 : 00..99	84	VELOCITY SENSE	9D..63 : -99..99	
	OSC-1 PITCH EG			VDF-1, VDA-1 KBD TRACK MODE		
40	PITCH EG INT	9D..63 : -99..99	85	F-1, A-1 KBD TRACK MODE		*4
	OSC-1 PITCH MG			OSC-1 PANPOT		
41	WAVEFORM	bit0..2 : 0..5 *2	86	A:B PAN	00..1E,FF	*5
	KEY SYNC	bit7=0:OFF, =1:ON		OSC-2 PARAMETER		
42	FREQUENCY	00..63 : 00..99	87	SAME AS OSC-1(40..86)		
43	DELAY	00..63 : 00..99	:			
44	FADE IN	00..63 : 00..99	133			
45	INTENSITY	00..63 : 00..99	134	( RESERVE )	00	
46	FREQ MOD BY KBD TRK	9D..63 : -99..99		EFFECT PARAMETER		
47	INTENSITY MOD BY AT	00..63 : 00..99	135			
48	INTENSITY MOD BY JS	00..63 : 00..99	:			*20
49	FREQ MOD BY AT+JS	00..09 : 0..9	163			

GLOBAL PARAMETERS (TABLE 2)

No.	PARAMETER	DATA(Hex) : VALUE				
	GLOBAL PARAMETER		*1	: 0	: SINGLE	
				1	: DOUBLE	
00	MASTER TUNE	CE..32 : -50..50		2	: DRUMS	
01	KEY TRANSPOSE	F4..0C : -12..12				
02	DAMPER POLARITY	00 : o, 01 : r	*2	: 0	: TRIANGLE	
03	ASSIGNABLE PEDAL 1	00..2B *8		1	: UP SAW	
04	ASSIGNABLE PEDAL 2	00..2B *8		2	: DOWN SAW	
05	MAIN SCALE TYPE	00..0A *9		3	: SQUARE1	
06	MAIN SCALE KEY	00..0B : C..B		4	: RANDOM	
07	USER SCALE	CE..32 : -50..50		5	: SQUARE2	
:						
18			*3	: bit0	: ATTACK TIME SW	=0:OFF, =1:ON
19	VELOCITY CURVE	0..7 : 1..8		bit1	: DECAY TIME SW	=0:OFF, =1:ON

20	AFTER TOUCH CURVE	0..7 : 1..8
21	SUB SCALE TYPE	00..0A *9
22	SUB SCALE KEY	00..0B : C..B
23	RESERVE	00
:		
27		

bit2 : SLOPE TIME SW =0:OFF, =1:ON  
bit3 : RELEASE TIME SW =0:OFF, =1:ON  
bit4 : ATTACK TIME POLARITY =0:+, =1:-  
bit5 : DECAY TIME POLARITY =0:+, =1:-  
bit6 : SLOPE TIME POLARITY =0:+, =1:-  
bit7 : RELEASE TIME POLARITY =0:+, =1:-

DRUM PARAMETERS ( TABLE 3 )

No.	PARAMETER	DATA(Hex) : VALUE
DRUM KIT 1-INDEX#0		
00	INST NO.	00:OFF, 01..:INT
01	KEY	0C..73 : C0..G8
02	A:B PAN	bit0..4 *10
	EXCLUSIVE ASSIGN	bit5..7 *10
03	TUNE	88..78 : -120..120
04	LEVEL	9D..63 : -99..99
05	DECAY	9D..63 : -99..99
06	D SEND LEVEL	bit0..3: 0..9
	C SEND LEVEL	bit4..7: 0..9
DRUM KIT 1-INDEX#1 .. DRUM KIT 2-#59		
07	SAME AS DRUM KIT 1-#0(00..06)x(60x2-1)	
:		
839		

\*6 : A11 ..A88 : 00..3F  
B11 ..B88 : 40..7F  
Dr11..Dr16: 80..85  
C11 ..C88 : 86..C5  
U11 ..U88 : 00..3F  
Dr17..Dr18: 40..41

\*4 : bit0,1 .. VDF 0 : OFF  
bit4,5 .. VDA 1 : LOW  
2 : HIGH  
3 : ALL

\*5 : 00 : L15  
: :  
OF : CNT  
: :  
1E : R15  
1F : PRG (When in BSEQ Mode)  
FF : OFF

\*7 : bit0 : PROGRAM CHANGE =0:DIS, =1:ENA  
bit1 : DAMPER =0:DIS, =1:ENA  
bit2 : AFTERTOUCH =0:DIS, =1:ENA  
bit3 : CONTROL CHANGE =0:DIS, =1:ENA  
bit7=1 : A11 ..A88  
: B11 ..B88  
: Dr11..Dr16  
: C11 ..C88  
=0 : U11 ..U88  
: Dr17..Dr18

# Program is selected by \*6 and \*7(bit7)

SEQUENCER CONTROL DATA (TABLE 4-1)

No.	PARAMETER	DATA(Hex) : VALUE	PATTERN 0 PARAMETERS
SONG 0 CONTROL DATA			2960 BEAT *12
00	MIDI Channel(Tr.1)	00..0F : 1..16	2961 LENGTH 01..63 : 1..99
:	:	:	PATTERN 1..99 PARAMETERS
15	MIDI Channel(Tr.16)		2962 SAME AS PATTERN 0(2960,2961) x 99
16	STATUS (Tr.1)	*11	:
:	:	:	3159
31	STATUS (Tr.16)		SONG 0, TRACK 1 DATA ADDRESS
32	BEND RANGE (Tr.1)	00..0C : 00..12	3160 DATA ADDRESS(LSB) 0000 (Start Addr)
:	:	:	3161 DATA ADDRESS(MSB)

47	BEND RANGE (Tr.16)			SONG 0, TRACK 2 .. TRACK 16 DATA ADDRESS
48	BEAT		*12	3162 SAME AS
49	TEMPO	28..F0 : 40..240	:	SONG 0, TRACK 1 ADDRESS(3160,3161) x 15
50	PROTECT (Tr.1)	bit0=0:OFF, =1:ON	3191	SONG 0, TEMPO TRACK DATA ADDRESS
	:	:		
	PROTECT (Tr.8)	bit7	3192	DATA ADDRESS (LSB)
	PROTECT (Tr.9)	bit0=0:OFF, =1:ON	3193	DATA ADDRESS (MSB)
51	:	:		SONG 1..9 TRACK DATA ADDRESS
	PROTECT (Tr.16)	bit7	3194	SAME AS SONG 0 TRACK ADDRESS(3160..3193)
52	NEXT SONG NO.		*13	x 9
53	SONG NAME (Head)	20..7F : ' '..<-'	3499	
:	:			PATTERN 0 DATA ADDRESS
62	SONG NAME (Tail)		3500	DATA ADDRESS (LSB)
63	( RESERVE )	00	3501	DATA ADDRESS (MSB)
64	EFFECT PARAMETER			PATTERN 1 .. PATTERN 99 DATA ADDRESS
:			*20	3502 SAME AS PATTERN 0(3500,3501)
92			:	
	TRACK 1 CONTROL DATA		3699	
93	PROGRAM NO.		*6	3700 End Pattern Addr(L)
94	OUTPUT LEVEL	00..7F : 00..127	3701	End Pattern Addr(H)
95	KEY TRANSPOSE	E8..18 : -24..24		
96	DETUNE	CE..32 : -50..50		SEQUENCE DATA ( TABLE 4-2 )
97	A:B PAN	00..1E,1F,FF	*5	No. PARAMETER DATA(Hex) : VALUE
98	D SEND LEVEL	bit0..3 : 0..9,PRG		SEQUENCE DATA 1
	C SEND LEVEL	bit4..7 : 0..9,PRG	3702	DATA (1-L) *15
99	KEY WINDOW TOP	00..7F : C-1..G9	3703	DATA (1-H) *15
100	KEY WINDOW BOTTOM	00..7F : C-1..G9	3704	DATA (2-L) *15
101	VEL WINDOW TOP	01..7F : 01..127	3705	DATA (2-H) *15
102	VEL WINDOW BOTTOM	01..7F : 01..127		SEQUENCE DATA 2 ..
103	CONTROL FILTER		*7	3706 SAME AS SEQUENCE DATA 1(3702..3705)
104	MIDI CHANNEL	00..0F : 1..16	:	
	TRACK 2..16 CONTROL DATA			
105	SAME AS TRACK 1(93..104)			x 15
:				
284				
285..290	( RESERVE )	00		
291	METRONOME LEVEL	00..63 : 0..99		
292	METRONOME PAN	00..1E	*5	
293	METRONOME LEAD IN	0..2 : 0..2		
294	TEMPO TRACK ON/OFF	0:OFF, 1:ON		
295	( RESERVE )	00		

SONG 1..9 CONTROL DATA	
296	SAME AS SONG 0 (00..295) x 9
:	
2959	

```

*8 : 0 : OFF
      1 : START/STOP
      2 : SYNC START/STOP
      3 : RESET
      4 : INTRO/ENDING 1
      5 : INTRO/ENDING 2
      6 : FILL 1
      7 : FILL 2
      8 : VARIATION 1
      9 : VARIATION 2
      A : VARIATION 3
      B : VARIATION 4
      C : CHORD HOLD
      D : BASS INVERSION
      E : SCALE CHANGE
      F : ARRANGEMENT UP
     10 : ARRANGEMENT DOWN
     11 : PROGRAM UP
     12 : PROGRAM DOWN
     13 : VARIATION UP
     14 : VARIATION DOWN
     15 : PUNCH IN/OUT
     16 : EFFECT 1 ON/OFF
     17 : EFFECT 2 ON/OFF
     18 : DRUM MUTE
     19 : PERC MUTE
    1A : BASS MUTE
    1B : ACC1 MUTE
    1C : ACC2 MUTE
    1D : ACC3 MUTE
    1E : KB VOLUME
    1F : EXPRESSION
    20 : VDF CUTOFF
    21 : EFFECT CONTROL
    22 : DATA ENTRY
    23 : OFF
    24 : OFF
    25 : KBD LOCK
    26 : TAP TEMPO
    27 : SOUND HOLD ON/OFF
    28 : SUSTAIN ON/OFF
    29 : FADE IN/OUT
   2A : ENSEMBLE ON/OFF
   2B : MASTER VOLUME

```

```

*9 : 0 : EQUAL TEMP
      1 : EQUAL TEMP 2
      2 : PURE MAJOR
      3 : PURE MINOR
      4 : ARABIC
      5 : PYTHAGOREAN
      6 : WERKMEISTER
      7 : KIRNBERGER
      8 : SLENDRO
      9 : PELOG
      A : USER SCALE

```

```

*10 : bit0..4 = 00 : L15
              :      :
              0F : CNT
              :      :
              1E : R15
              1F : OFF
      bit5..7 = 0 : EX Off
              1 : EX Group1
              :      :
              6 : EX Group6
              7 : Self

```

```

*11 : bit0,1= 0 : OFF
              1 : INT
              2 : EXT
              3 : BOTH

```

bit2,3= 0 : Play, = 1 : Mute, = 2 : Solo

\*12 : bit0..5 10..18 : 1/4 .. 9/4  
 20..2F : 1/8 .. 16/8  
 30..3F : 1/16 .. 16/16

bit7 = 0 : High Resolution  
 1 : Low Resolution

\*13 : bit0..6 = 0 : Song0  
 : :  
 9 : Song9

7F : OFF

bit7 = 0/1 -> Auto Start OFF/ON

\*14 : When set to Single/Double Mode  
 0000 : A.Piano 1  
 : :  
 0153 : DJ Kit 2  
 0154 : L)A.Piano3  
 0155 : R)A.Piano3  
 0156 : A.Piano 3

When set to Drum Mode

00 : User Kit 1

: :

07 : Percussion

\*15 : SEQUENCE DATA FORMAT

\*15-1 NOTE ON/OFF

DATA(1-H) DATA(1-L) DATA(2-H) DATA(2-L)

```
+-----+-----+-----+-----+
|lvvv vv t|tttt tttt |kkkk kkk g|gggg gggg |
+-----+-----+-----+-----+
```

Velocity Event Time Key No. Length

t : 1/96th quater note unit, t = 1FEH : Tie from previous bar

g : 1/96th quater note unit, g = 1FEH : Tie to next bar

\*15-2 PITCH BEND

```
+-----+-----+-----+-----+
|0001 000 t|tttt tttt |0 vvv vvvv|0 vvv vvvv|
+-----+-----+-----+-----+
```

Event Time Value(H) Value(L)

\*15-3 AFTER TOUCH

```
+-----+-----+-----+-----+
|0010 000 t|tttt tttt | 0000 0000|0 vvv vvvv|
+-----+-----+-----+-----+
```

Event Time Value

\*15-4 PROGRAM CHANGE

```
+-----+-----+-----+-----+
|0011 000 t|tttt tttt | 0000 00bb|0ppp pppp |
+-----+-----+-----+-----+
```

Event Time Bank Program No.

b = 00..02

p = 00..7F

\*15-5 CONTROL CHANGE

```
+-----+-----+-----+-----+
|0100 000 t|tttt tttt | 0vvv vvvv|0ccc cccc |
+-----+-----+-----+-----+
```

Event Time Value Control No.

c = 00..65 : Same as MIDI Control Change

= 66 : Assignable Pedal

\*15-6 POLY KEY PRESSURE

```
+-----+-----+-----+-----+
|0101 000 t|tttt tttt |0 vvv vvvv|0 kkk kkkk|
+-----+-----+-----+-----+
```

Event Time Value Key No.

\*15-7 BAR

```
+-----+-----+-----+-----+
|0110 00bb |bbbb bbbb |xx ss ssss|0ppp pppp |
+-----+-----+-----+-----+
```

Bar No. Type Beat Pattern No.

x = 00 : Pattern not used

= 10 : Pattern continued

= 11 : Pattern start

s = 10..18 : 1/4..9/4

= 20..2F : 1/8..16/8

= 30..3F :1/16..16/16

\*15-8 TRACK END

```

+-----+-----+-----+-----+
|0111 000 t|tttt tttt |0000 00bb |bbbb bbbb |
+-----+-----+-----+-----+

```

Event Time Last Bar No.

## ARRANGEMENT PARAMETERS ( TABLE 5 )

No.	PARAMETER	DATA(Hex) : VALUE	ACC 1..3 PARAMETERS
00	ARRANGE NAME (Head)	20..7F : ' '..<-'	58 SAME AS DRUMS
:	:	:	:
09	ARRANGE NAME (Tail)		81
10	SYTLE NO.	00..37 : 11..68	KBD 1..2 PARAMETERS
11		: 71..84	82 SAME AS DRUMS
12	INITIAL VARIATION	00..03 : VAR 1..4	:
13			97
14	INITIAL TEMPO	0A..D2 : 40..240	KBD1 VELOCITY WINDOW
15	KEYBOARD ASSIGN	00..03 : *16	98 TOP 01..7F : 1..127
16	SPLIT POINT	24..60 : C2..C7	99 BOTTOM 01..7F : 1..127
17	OCTAVE	FE..02 : -2..+2	KBD2 VELOCITY WINDOW
18	TRANPOSE	F5..0B : -C#..+B	100 TOP 01..7F : 1..127
19	MANUAL DRUM KIT	00..07 : Dr1..Dr8	101 BOTTOM 01..7F : 1..127
	SWITCHES		102 EFFECT PARAMETERS *20
20	DYNAMIC VELOCITY	bit0=0:OFF, =1:ON	:
	TEMPO LOCK	bit1=0:OFF, =1:ON	130
	KBD1 DAMPER ENABLE	bit2=0:OFF, =1:ON	
	KBD2 DAMPER ENABLE	bit3=0:OFF, =1:ON	
	CHORD SCANNING TYPE		*16 : 00 : SINGLE
21	CHORD SCAN LOW	bit0=0:OFF, =1:ON	01 : LAYER
	CHORD SCAN HIGH	bit1=0:OFF, =1:ON	02 : SPLIT
	BASS INVERSION	bit2=0:OFF, =1:ON	03 : M.DRUMS
	CHORD HOLD	bit3=0:OFF, =1:ON	
	CHORD LATCH	bit4=0:OFF, =1:ON	*17 : BANK = 00..04 PROG = 00..7F
22	DEFAULT DRUM MAPPING	00..07 : Dr1..Dr8	
:			
25			
26	RESERVE	00	
:			
29			
30	FILL1	00..0C :OFF..DOWN	
31			
32	FILL2	00..0C :OFF..DOWN	
33			
	DRUM PARAMETERS		



34	PROG	*17
35	BANK	
36	VOL	00..7F : 0..127
37	PAN	*5
38	C SEND LEVEL	bit0..3 : 0..9,PRG
	D SEND LEVEL	bit4..7 : 0..9,PRG
39	OCTAVE	FE..02 : -2..+2
40	OUT STATUS	*11
41	WRAP-AROUND	FF..0B : STY..11
PERCUSSION PARAMETERS		
42	SAME AS DRUMS	
:		
49		
BASS PARAMETERS		
50	SAME AS DRUMS	
:		
57		

STYLE CONTROL DATA ( TABLE 6-1 )

No.	PARAMETER	DATA(Hex) : VALUE	INTRO1 CHORD VARIATION1 PARAMETERS	
00	STYLE NAME (Head)	20..7F : ' '..<-'	110	KEY *18
:	:	:	111	LENGTH 00..10 : 0..16
09	STYLE NAME (Tail)		INTRO1 CHORD VARIATION2 PARAMETERS	
10	SYTLE TYPE	0.USER CREATED	112	KEY *18
		1.BUILT-IN	113	LENGTH 00..10 : 0..16
		2.CARD OR DISK	INTRO2 PARAMETERS	
11	TEMPO	0A..D2 : 40..240	114	SAME AS INTRO1
12	TIME SIGNATURE	Hi Res only *12	:	
	NOTE RETRIGGER SWITCH		117	
13	BASS	bit2=0:OFF, =1:ON	ENDING 1..2 PARAMETERS	
	ACC1	bit3=0:OFF, =1:ON	118	SAME AS INTRO1
	ACC2	bit4=0:OFF, =1:ON	:	
	ACC3	bit5=0:OFF, =1:ON	125	
	NOTE SHIFT UP RANGE		FILL 1..2 PARAMETERS	
14	BASS	00..0B : 0..11	126	SAME AS INTRO1
15	ACC1	00..0B : 0..11	:	
16	ACC2	00..0B : 0..11	133	
17	ACC3	00..0B : 0..11	VARIATION 1 CHORD VARIATION TABLE	
	TENSION AVAILABLE		134	Major 00..05 : 1..6
18	ACC1	bit3=0:OFF, =1:ON	135	M6 00..05 : 1..6

	ACC2	bit4=0:OFF, =1:ON	136	M7	00..05 : 1..6
	ACC3	bit5=0:OFF, =1:ON	137	M7 5	00..05 : 1..6
19	RESERVE	00	138	sus4	00..05 : 1..6
:			139	sus2	00..05 : 1..6
37			140	M7sus4	00..05 : 1..6
DRUM PARAMETERS			141	minor	00..05 : 1..6
38	PROG	*17	142	m6	00..05 : 1..6
39	BANK		143	m7	00..05 : 1..6
40	VOL	00..7F : 0..127	144	m7 5	00..05 : 1..6
41	PAN	*5	145	mM7	00..05 : 1..6
PERCUSSION PARAMETTERS			146	7th	00..05 : 1..6
42	SAME AS DRUMS		147	7 5	00..05 : 1..6
:			148	7sus4	00..05 : 1..6
45			149	dim	00..05 : 1..6
BASS PARAMETERS			150	dimM7	00..05 : 1..6
46	SAME AS DRUMS		151	aug	00..05 : 1..6
:			152	aug7	00..05 : 1..6
49			153	augM7	00..05 : 1..6
ACC 1..3 PARAMETERS			VARIATION 2..4 CHORD VARIATION TABLE		
50	SAME AS DRUMS		154	SAME AS VARIATION1	
:			:		
61			213		
VARIATION1, CHORD VARIATION1 PARAMETERS					
62	KEY	*18	*18	00	C MAJOR
63	LENGTH	00..10 : 0..16		01	C MINOR
VARIATION1 CHORD VARIATION2..6 PARAMETERS				02	C#MAJOR
64	SAME AS VARIATION1 CHORD VARIATION1			03	C#MINOR
:				:	
73				16	B MAJOR
VARIATION 2..4 PARAMETERS				17	B MINOR
74	SAME AS VARIATION1				
:					
109					
INTRO1 CHORD VARIATION TABLE			VARIATION 2..4 DATA ADDRESS		
214	Major	00..01 : 1..2	546	SAME AS VARIATION1 DATA ADDRESS	
215	M6	00..01 : 1..2	:		
216	M7	00..01 : 1..2	581		
217	M7 5	00..01 : 1..2	ENDING 1..2 DATA ADDRESS		
218	sus4	00..01 : 1..2	582	SAME AS VARIATION1 DATA ADDRESS	

219	sus2	00..01 : 1..2	:	
220	M7sus4	00..01 : 1..2	605	
221	minor	00..01 : 1..2	FILL 1..2 DATA ADDRESS	
222	m6	00..01 : 1..2	606	SAME AS VARIATION1 DATA ADDRESS
223	m7	00..01 : 1..2	:	
224	m7 5	00..01 : 1..2	629	
225	mM7	00..01 : 1..2	PATTERN 0 DATA ADDRESS	
226	7th	00..01 : 1..2	630	DATA ADDRESS (LSB)
227	7 5	00..01 : 1..2	631	DATA ADDRESS (MSB)
228	7sus4	00..01 : 1..2	PATTERN 1..99 DATA ADDRESS	
229	dim	00..01 : 1..2	632	SAME AS PATTERN 0
230	dimM7	00..01 : 1..2	:	
231	aug	00..01 : 1..2	829	
232	aug7	00..01 : 1..2	830	END PATTERN ADDR(L)
233	augM7	00..01 : 1..2	831	END PATTERN ADDR(M)
INTRO2 CHORD VARIATION TABLE				
234	SAME AS INTRO1		STYLE DATA ( TABLE 6-2 )	
:			No.	PARAMETER DATA(Hex) : VALUE
253			STYLE 1 DATA	
ENDING 1..2 CHORD VARIATION TABLE			0	DATA (1-L) *15
254	SAME AS INTRO1		1	DATA (1-H) *15
:			2	DATA (2-L) *15
293			3	DATA (2-H) *15
FILL 1..2 CHORD VARIATION TABLE			STYLE 2 DATA ..	
294	SAME AS INTRO1		4	SAME AS STYLE1
:			:	
333				
PATTERN 0 CONTROL DATA				
334	BEAT	:	*12	STYLE HEADER ( TABLE 6-3 )
335	LENGTH	01..63 : 1..99	No.	PARAMETER DATA(Hex) : VALUE
PATTERN 1..99 CONTROL DATA			STYLE 1	
336	SAME AS PATTERN 0		0	STYLE1 ADDRESS
:			:	
533			3	
VARIATION1 ACC1 DATA ADDRESS			4	STYLE1 SIZE
534	DATA ADDRESS (LSB)		5	
535	DATA ADDRESS (MSB)		STYLE 2..4	
VARIATION1 ACC 2..3 DATA ADDRESS			6	SAME AS STYLE1
536	SAME AS VARIATION1 ACC1 DATA ADDRESS		:	
:			23	
539				

VARIATION1 BASS, DRUMS, PERC. DATA ADDRESS	
540	SAME AS VARIATION1 DATA ADDRESS
:	
545	

## BACKING SEQUENCE CONTROL DATA ( TABLE 7-1 )

No.	PARAMETER	DATA(Hex) : VALUE	EXTRA TRACK 1 CONTROL DATA	
BSEQ 0 CONTROL DATA			46	PROG *17
00	BSEQ NAME (Head)	20..7F : ' '..<-'	47	BANK
:	:	:	48	VOL 00..7F : 0..127
09	BSEQ NAME (Tail)		49	PAN *5
10	ARRANGEMENT NO.	00..3F : 11..88	50	C SEND LEVEL bit0..3 : 0..9,PRG
11				D SEND LEVEL bit4..7 : 0..9,PRG
12	STYLE NO.	00..37 : 11..68	51	TRACK STATUS *11
13		71..84	52	BEND RANGE 00..0C : 00..12
14	VARIATION	00..03 : VAR 1..4	53	KEY TRANSPOSE E8..18 : -24..24
15			54	DETUNE CE..32 : -50..50
16	TEMPO	0A..D2 : 40..240	55	PROTECT : OFF/ON
17	KEYBOARD ASSIGN	*16	56	MIDI CHANNEL 00..0F : 1..16
	CHORD SCANNING TYPE		57	VEL WINDOW TOP 01..7F : 1..127
18	CHORD SCAN LOW	bit0=0:OFF, =1:ON	58	VEL WINDOW BOTTOM 01..7F : 1..127
	CHORD SCAN HIGH	bit1=0:OFF, =1:ON	59	KEY WINDOW TOP 00..7F : C-1..G9
	BASS INVERSION	bit2=0:OFF, =1:ON	60	KEY WINDOW BOTTOM 00..7F : C-1..G9
	CHORD HOLD	bit3=0:OFF, =1:ON	EXTRA TRACK 2..8 CONTROL DATA	
	CHORD LATCH	bit4=0:OFF, =1:ON	61	SAME AS TRACK 1
19	KBD1 PROG	*17	:	
20	KBD1 BANK		165	
21	KBD1 OCTAVE	FE..02 : -2..+2	166	EFFECT PARAMETER *20
22	KBD2 PROG	*17	:	
23	KBD2 BANK		194	
24	KBD2 OCTAVE	FE..02 : -2..+2	BSEQ 1..9 CONTROL DATA	
25	KEYBOARD TRK STATUS	*21-1	195	SAME AS BSEQ 0
26	CONTROL TRK STATUS	*21-1	:	
27	CHORD TRK STATUS	*21-1	1949	
28	AUTOTEMPO	0A..D2 : 40..240	BSEQ TRACK1 DATA ADDRESS	
29	BEAT	Hi Res only *12	1950	DATA ADDRESS (LSB)
30	SPLIT POINT	24..60 : C2..C7	1951	DATA ADDRESS (MSB)
31	TRANSPOSE	F5..0B : -C#..+B	BSEQ0 TRACK 2..16 DATA ADDRESS	
	SWITCHES		1952	SAME AS BSEQ0 TRACK1 DATA ADDRESS
32	DYNAMIC VELOCITY	bit0=0:OFF, =1:ON	:	
33	RESERVE	00	1981	

:				BSEQ0 TEMPO TRACK DATA ADDRESS	
39				1982	SAME AS BSEQ0 TRACK1 DATA ADDRESS
40	METRONOME SWITCH		*21-2	1983	
41	METRONOME LEVEL	00..63 : 0..99		BSEQ 1..9	DATA ADDRESS
42	METRONOME PAN		*5	1984	SAME AS BSEQ0 TRACK DATA ADDRESS
43	METRONOME LEAD-IN	0..2 : 0..2		:	
44	NEXT BSEQ No.		*21-3	2289	
45	AUTO START		*21-4	2290	END ADDRESS (LSB)
				2291	END ADDRESS (MSB)

## \*21-1 : Track Status

00 : MUTE  
01 : PLAY

## \*21-2 : Metronome Switch

00 : OFF  
01 : ON  
02 : REC

## \*21-3 : Next BSeq No.

FF : OFF  
00 : BSeq 0  
:  
09 : BSeq 9

## \*21-4 : Auto Start

00 : OFF  
01 : ON

## B.SEQUENCE DATA ( TABLE 7-2 )

No.	PARAMETER	DATA(Hex) : VALUE	
	BACKING SEQUENCE DATA 1		*19-1-1 : 0..55 : P11..P68, U1..U4, C1..C4
0	DATA (1-L)	*19	*19-1-2 : 0 : Variation1
1	DATA (1-H)	*19	:
2	DATA (2-L)	*19	3 : Variation4
3	DATA (2-H)	*19	4 : Intro1
	BACKING SEQUENCE DATA 2..		5 : Intro2
4	SAME AS BACKING SEQUENCE DATA 1 (0..3)		6 : Ending1
:			7 : Ending2
			8 : Fill1
			9 : Fill2

## \*19 : BACKING SEQUENCE DATA FORMAT

## \*19-1 : BACKING CONTROL EVENT

DATA(1-H)	DATA(1-L)	DATA(2-H)	DATA(2-L)
10ii iii t tttt tttt	vvvv vvvv	vvvv vvvv	
EventID	EventTime	Value 2	Value 1

EventID	Value	
0  Arrangement	0..63  11..88	*19-1-3 : 0 : SINGLE
1  Style	0..55  *19-1-1	1 : LAYER
2  Variation	0..9  *19-1-2	2 : SPLIT
		3 : M.DRUM

3	Keyboard Assign	0..3	*19-1-3
4	Chord Scan	0..3	*19-1-4
5	Chord Hold	0/1	OFF/ON
6	Bass Inversion	0/1	OFF/ON
7	Transpose	-11..+11	
8	Drum Mute	0/1	MUTE/PLAY
9	Perc.Mute	0/1	MUTE/PLAY
10	Bass Mute	0/1	MUTE/PLAY
11	ACC1 Mute	0/1	MUTE/PLAY
12	ACC2 Mute	0/1	MUTE/PLAY
13	ACC3 Mute	0/1	MUTE/PLAY
14	Drum Map	0..7	1..8
15	KBD1 Prog	V1 = PROG	V2 = BANK
16	KBD2 Prog	V1 = PROG	V2 = BANK
17	KBD1 Octave	-2..+2	
18	KBD2 Octave	-2..+2	

\*19-1-4 : 0 : OFF

1 : LOWER

2 : UPPER

3 : FULL

## \*19-2 : CHORD EVENT

1111	iii	t	tttt	tttt	nnnn	nnnn	bbbb	rrrr
ChordID	EventTime	TensionNote	Bass	Root				

ChordID = 0 : No Chord

- 1 : Major
- 2 : Major 6th
- 3 : Major 7th
- 4 : Major 7th Flatted 5th
- 5 : Suspended 4th
- 6 : Suspended 2nd
- 7 : Major 7th Suspended 4th
- 8 : Minor
- 9 : Minor 6th
- 10 : Minor 7th
- 11 : Minor 7th Flatted 5th
- 12 : Minor Major 7th
- 13 : Dominant 7th
- 14 : 7th Flatted 5th
- 15 : 7th Suspended 4th
- 16 : Diminished
- 17 : Diminished Major 7th
- 18 : Augmented
- 19 : Augmented 7th
- 20 : Augmented Major 7th

TensionNote = 0000 0001 : Flatted 9th  
 0000 0010 : 9th  
 0000 0100 : Sharped 9th  
 0000 1000 : 11th  
 0001 0000 : Sharped 11th  
 0010 0000 : Flatted 13th  
 0100 0000 : 13th

## \*20 EFFECT PARAMETERS

				13:Stereo Delay, 14:Cross Delay			
No.	PARAMETER	DATA(Hex)	VALUE				
(00)	Effect 1 Type No.	0,1..2F:OFF,1..47		(00)	Delay Time L (L)		
(01)	Effect 2 Type No.	0,1..2F:OFF,1..47		(01)	Deray Time L (H)		
(02)	Effect1 L-Ch E.Balnc	00..64 : 00..100		(02)	Feedback	9D..63 : -99..99	
(03)	Effect1 R-Ch E.Balnc	00..64 : 00..100		(03)	High Damp	00..63 : 00..99	

			(04)	Delay Time R (L)		
(04)	Effect2 L-Ch E.Balnc	00..64 : 00..100			00..1F4: 00..500	
			(05)	Delay Time R (H)		
(05)	Effect2 R-Ch E.Balnc	00..64 : 00..100				
			(06)	EQ High	F4..0C : -12..12	
(06)	Output 3 Pan	00,01..65 *20-1				
			(07)	EQ Low	F4..0C : -12..12	
(07)	Output 4 Pan	00,01..65 *20-1				
			15:Dual Delay			
(08)	Effect I/O	bit5..0 *20-2	(00)	Delay Time L (L)		
(09)	Effect 1 Parameters				00..1F4: 00..500	
:		*20-3	(01)	Delay Time L (H)		
(16)			(02)	Feedback L	9D..63 : -99..99	
			(03)	High Damp L	00..63 : 00..99	
(17)	Effect 1 Mod Source	00..0D *20-4	(04)	Delay Time R (L)		
(18)	Effect 1 Mod Amount	F1..0F : -15..15			00..1F4: 00..500	
			(05)	Delay Time R (H)		
(19)	Effect 2 Parameters		(06)	Feedback R	9D..63 : -99..99	
:		*20-3	(07)	High Damp R	00..63 : 00..99	
(26)			16..18:Multitap Delay 1,2,3			
(27)	Effect 2 Mod Source	00..0D *20-4	(00)	Delay Time A(L)		
(28)	Effect 2 Mod Amount	F1..0F : -15..15			00..1F4: 00..500	
			(01)	Delay Time (H)		
*20-1 : 00 : Off *20-2 :			(02)	Delay Time B(L)		
01 :	R	bit0=0:Efct1 L-Ch Off,=1:On			00..1F4: 00..500	
02 :	01:99	bit1=0:Efct1 R-Ch Off,=1:On	(03)	Delay Time (H)		
.	.		(04)	Feed back	9D..63 : -99..99	
.	.	bit2=0:Efct2 L-Ch Off,=1:On	(06)	EQ Low	F4..0C : -12..12	
64 :	99:01	bit3=0:Efct2 R-Ch Off,=1:On	(07)	EQ High	F4..0C : -12..12	
65 :	L	bit4,5=0:Serial	19,20:Stereo Chorus 1,2			
1:Parallel			(00)	Mod Depth	00..63 : 00..99	
2:Parallel 2			(01)	Mod Speed	00..D8 *20-3-2	
3:Parallel 3					bit0=0:Sin, =1:Tri	
*20-3 : Effect Parameters (8Byte) 47 Types			(02)	MG Status	*20-3-3	bit1 <- 1
offset   PARAMETER   DATA(Hex) : VALUE						bit2 <- 0
1..3:Hall, ( 4,5:Room, 6:Live Stage )			(04)	Delay Time	00..C8 : 00..200	
(00)	Reverb Time	00..61(2F):0.2..9.9(4.9)	(06)	EQ High	F4..0C : -12..12	
(01)	( NUL )	00	(07)	EQ Low	F4..0C : -12..12	
(02)	High Damp	00..63 : 00..99	21:Quadrature Chorus, 22:X Over Chorus			
(03)	Pre Delay	00..C8 : 00..200	(00)	Delay Time L	00..FA : 00..250	
(04)	E.R Level	00..63 : 00..99	(01)	Delay Time R	00..FA : 00..250	
(05)	( NUL )	00	(02)	Mod Speed	01..63 : 01..99	
(06)	EQ High	F4..0C : -12..12	(03)	Mod Depth	00..63 : 00..99	
(07)	EQ Low	F4..0C : -12..12	(04)	Mod Waveform	EB..14 *20-3-4	
NUL not listed from here on, Value must be 00			(06)	EQ Low	F4..0C : -12..12	
7:Wet Plate, 8:Dry Plate, 9:Spring			(07)	EQ High	F4..0C : -12..12	
(00)	Pre Delay(L)		23:Harmonic Chorus			
(01)	Pre Delay(H)	00..C8 : 00..200	(00)	Delay Time A (L)		
(02)	E.R Level	01..0A : 01..10			00..1F4: 00..500	
(01)	Delay Time A (H)					

(03)	Reverb Time	00..63 : 00..99	(02)	Delay Time B (L)	00..1F4 : 00..500
(04)	High Damp	00..63 : 00..99	(03)	Delay Time B (H)	
(06)	EQ Low	F4..0C : -12..12	(04)	Mod Speed	01..63 : 01..99
(07)	EQ High	F4..0C : -12..12	(05)	Mod Depth	00..63 : 00..99
10..12:Early Reflection 1,2,3			(06)	Filter Split Point	00..12 : 00..18
(00)	E.R Time	00..46 : 100..800	24:Symphonic Ensemble		
(01)	Pre Delay	00..C8 : 00..200	(00)	Mod Depth	00..63 : 00..99
(06)	EQ High	F4..0C : -12..12	(06)	EQ High	F4..0C : -12..12
(07)	EQ Low	F4..0C : -12..12	(07)	EQ Low	F4..0C : -12..12

25,26:Flanger1,2, 27:X Over Flanger			38:Chorus-Delay, 39:Flanger-Delay		
(00)	Delay Time	00..C8 : 00..200	(00)	Delay Time	00..32 : 00..50
(01)	Mod Depth	00..63 : 00..99	(01)	Mod Speed	01..63 : 01..99
(02)	Mod Speed	01..63 : 01..99	(02)	Mod Depth	00..63 : 00..99
(03)	Feedback	9D..63 : -99..99	(03)	Feedback	9D..63 : -99..99
(06)	EQ Low	F4..0C : -12..12	(04)	Delay Time	00..E1 : 00..450
(07)	EQ High	F4..0C : -12..12	(05)	Feedback	9D..63 : -99..99
28:Exciter			40:Delay / Hall		
(00)	Harmonic density	9D..63 : -99..99	(00)	Delay Time (L)	00..1F4 : 00..500
(01)	Hot Spot	00..09 : 01..10	(01)	Delay Time (H)	
(06)	EQ High	F4..0C : -12..12	(02)	Feedback	9D..63 : -99..99
(07)	EQ Low	F4..0C : -12..12	(03)	High Damp	00..63 : 00..99
29:Enhancer			(04)	Reverb Time	00..61 : 0.2..9.9
(00)	Harmonic Density	01..63 : 01..99	(06)	High Damp	00..63 : 00..99
(01)	Hot Spot	01..14 : 01..20	(07)	Pre Delay	00..96 : 00..150
(02)	Stereo Width	00..63 : 00..99	41:Delay / Room		
(03)	Delay	01..63 : 01..99	(00)	Delay Parameter	*20-3-1
(06)	EQ Low	F4..0C : -12..12	:		
(07)	EQ High	F4..0C : -12..12	(03)		
30:Distortion, 31:Over Drive			(04)	Reverb Time	00..2F : 0.2..4.9
(00)	Drive	01..6F : 01..111	(06)	High Damp	00..63 : 00..99
(01)	Hot Spot	00..63 : 00..99	(07)	Pre Delay	00..96 : 00..150
(02)	Resonance	00..63 : 00..99	42:Delay / Chorus, ( 43:Delay / Flanger )		
(03)	Distortion Level	00..63 : 00..99	(00)	Delay Parameter	*20-3-1
(06)	EQ Low	F4..0C : -12..12	:		
(07)	EQ High	F4..0C : -12..12	(03)		
32,33:Phaser 1,(2)			(04)	Depth	00..63 : 00..99
(00)	Mod Depth	00..63 : 01..99	(05)	Speed	00..D8 *20-3-2
(01)	Mod Speed	00..D8 : *20-3-2			bit0=0:S,=1:T(<-0)
		bit0=0:Sin, =1:Tri	(06)	MG Status	*20-3-3 bit1 <- 0



(02)	MG Status *20-3-3	bit1 <- 1,(0)			bit2 <- 0, (<-1)
		bit2 <- 0	(07)	Feedback	0,(9D..63:-99..99)
(03)	Feedback	9D..63 : -99..99	44:	Delay / Distortion,	45:Delay / Over Drive
(04)	Hot Spot	00..63 : 00..99	(00)	Delay Time (L)	00..1F4: 00..500
	34:Rotary Speaker		(01)	Delay Time (H)	
(00)	Vibrato Depth	00..0F : 00..15	(02)	Feedback	9D..63 : -99..99
(01)	Acceleration	01..0F : 01..15	(03)	Drive	01..6F : 01..111
(02)	Slow Speed	01..63 : 01..99	(04)	Hot Spot	01..63 : 01..99
(03)	Fast Speed	01..63 : 01..99	(05)	Resonance	00..63 : 00..99
	35:Auto Pan, (36:Tremolo)		(06)	Distortion Level	01..63 : 01..99
(00)	Depth	00..63 : 00..99	46:	Delay / Phaser	
(01)	Speed	00..D8 : *20-3-2	(00)	Delay Parameter	*20-3-1
		bit0=0:Sin, =1:Tri	:		
(02)	MG Status *20-3-3	bit1 <- 1, (0)	(03)		
		bit2 <- 0	(04)	Depth	00..63 : 00..99
(03)	Shape	9D..63 : -99..99	(05)	Speed	00..D8 *20-3-2
(06)	EQ High	F4..0C : -12..12	(06)	Feedback	9D..63 : -99..99
(07)	EQ Low	F4..0C : -12..12	47:	Delay / Rotary Speaker	
	37:Parametric EQ		(00)	Delay Time (L)	00..1F4: 00..500
(00)	Low Freq	00..1D : 00..29	(01)	Delay Time (H)	
(01)	Low Gain	F4..0C : -12..12	(02)	Feedback	9D..63 : -99..99
(02)	Mid Freq	00..63 : 00..99	(03)	Acceleration	01..0F : 01..15
(03)	Mid Gain	F4..0C : -12..12	(04)	Slow Speed	01..63 : 01..99
(04)	Mid Width	00..63 : 00..99	(05)	Fast Speed	01..63 : 01..99
(05)	High Freq	00..1D : 00..29			
(06)	High Gain	F4..0C : -12..12			

\*20-3-1 : Delay Parameter  
Same as 40-(00)..(03)

\*20-3-2 : Data(Hex) Value[Hz]  
00..63 0.03.. 3.00 (0.03step)  
64..C7 3.1 ..13.0 (0.1 step)  
C8..D8 14 ..30.0 ( 1 step )

\*20-3-3 : MG Status  
bit0 : Waveform =0:Sin, =1:Tri  
bit1 : Phase =0:0 degree, =1:180 degree  
bit2 : Wave Shape =0: Normal  
=1: for Flanger

\*20-3-4 : Waveform  
EB : T+10  
| : |  
FF : T-10  
00 : S-10  
| : |  
14 : S+10

\*20-4 : Dynamic Modulation Source  
0 : None  
1 : Joy Stick (+Y)  
2 : Joy Stick (-Y)  
3 : Aftertouch  
4 : Assignable Pedal 1  
5 : Assignable Pedal 2  
6 : VDA EG

No.	TRACK	PARAMETER	VALUE
0	----	TEMPO	40..240
1	----	CHORD LATCH	0..1
2	----	SPLIT POINT	0..127
3	----	TRANPOSE	-11..11
4	----	VARIATION BY FILL 1	0..12
5	----	VARIATION BY FILL 2	0..12
6	----	EFFECT 1 TYPE	0..47
7	----	EFFECT 1 LEVEL	0..100
8	----	EFFECT 2 TYPE	0..47
9	----	EFFECT 2 LEVEL	0..100
10	DRUM	PROGRAM	*21
11	DRUM	VOLUME	0..127
12	DRUM	PANPOT	-1..31
13	DRUM	C LEVEL	0..10
14	DRUM	D LEVEL	0..10
15	DRUM	MUTE	0..1
16	----	----	----
17	DRUM	OUTPUT STATUS	0..3
18	----	----	----
19	----	----	----
20	PERC	PROGRAM	*21
21	PERC	VOLUME	0..127

22	PERC	PANPOT	-1..31
23	PERC	C LEVEL	0..10
24	PERC	D LEVEL	0..10
25	PERC	MUTE	0..1
26	----	----	----
27	PERC	OUTPUT STATUS	0..3
28	----	----	----
29	----	----	----
30	BASS	PROGRAM	*21
31	BASS	VOLUME	0..127
32	BASS	PANPOT	-1..31
33	BASS	C LEVEL	0..10
34	BASS	D LEVEL	0..10
35	BASS	MUTE	0..1
36	BASS	OCTAVE	-2..2
37	BASS	OUTPUT STATUS	0..3

38	BASS	WRAP AROUND POINT	-1..11
39	----	----	----
40	ACC1	PROGRAM	*21
41	ACC1	VOLUME	0..127
42	ACC1	PANPOT	-1..31
43	ACC1	C LEVEL	0..10
44	ACC1	D LEVEL	0..10
45	ACC1	MUTE	0..1
46	ACC1	OCTAVE	-2..2
47	ACC1	OUTPUT STATUS	0..3
48	ACC1	WRAP AROUND POINT	-1..11
49	----	----	----
50	ACC2	PROGRAM	*21
51	ACC2	VOLUME	0..127
52	ACC2	PANPOT	-1..31
53	ACC2	C LEVEL	0..10
54	ACC2	D LEVEL	0..10
55	ACC2	MUTE	0..1
56	ACC2	OCTAVE	-2..2
57	ACC2	OUTPUT STATUS	0..3
58	ACC2	WRAP AROUND POINT	-1..11
59	----	----	----
60	ACC3	PROGRAM	*21
61	ACC3	VOLUME	0..127
62	ACC3	PANPOT	-1..31
63	ACC3	C LEVEL	0..10
64	ACC3	D LEVEL	0..10
65	ACC3	MUTE	0..1
66	ACC3	OCTAVE	-2..2
67	ACC3	OUTPUT STATUS	0..3
68	ACC3	WRAP AROUND POINT	-1..11
69	----	----	----
70	KBD1	PROGRAM	*21
71	KBD1	VOLUME	0..127
72	KBD1	PANPOT	-1..31
73	KBD1	C LEVEL	0..10
74	KBD1	D LEVEL	0..10
75	KBD1	MUTE	0..1
76	KBD1	OCTAVE	-2..2
77	----	----	----
78	----	----	----

79	KBD1	DAMPER ENABLE	0..1
80	KBD2	PROGRAM	*21
81	KBD2	VOLUME	0..127
82	KBD2	PANPOT	-1..31
83	KBD2	C LEVEL	0..10
84	KBD2	D LEVEL	0..10
85	KBD2	MUTE	0..1
86	KBD2	OCTAVE	-2..2
87	----	----	----
88	----	----	----
89	KBD2	DAMPER ENABLE	0..1

\*21 :    0..127 = BANK 0 : 0..127  
          128..255 = BANK 1 : 0..127  
          256..383 = BANK 2 : 0..127  
          384..399 = BANK 3 : 0..127  
          400, 407 = BANK 4 : 0,7

#### DRUM KIT PARAMETERS ( TABLE 9 )

No.	PARAMETER	No. from TABLE 3
0	INST No.	0+7n
1	KEY	1+7n
2	TUNE	3+7n
3	OUTPUT LEVEL	4+7n
4	DECAY	5+7n
5	EXCLUSIVE ASSIGN	2+7n b5..7
6	A:B PAN	2+7n b0..4
7	C SEND LEVEL	6+7n b4..7
8	D SEND LEVEL	6+7n b0..3

PARAM No. for DRUM PARAM CHANGE  
 n : 0..59 (Index)